

## Energy Efficiency Demonstration Scheme Expanded Project Profile R&D 56

## Energy Advice to Tenants

### The role of energy advice to tenants as a means of optimising the effects of refurbishment and thermal upgrading.

#### Host organisation

Bolton Metropolitan Borough Council  
Paderborne House  
Civic Centre  
Bolton

Merseyside Improved Houses (MIH)  
25 County Road  
Walton  
Liverpool  
L4 3QA

#### Monitoring organisations

W S Atkins and Partners  
Woodcote Grove  
Ashley Road  
Epsom Surrey

Building Use Studies Ltd  
14-16 Stephenson Way  
Euston  
London NW1 2HD

#### Aims

The aim of the two projects was to develop tenant advice schemes, which would help those on low incomes to achieve satisfactory standards of comfort in terms of space and water heating. Both projects sought to show that if people live in houses with adequate insulation and ventilation, and which have reasonably efficient and controllable heating systems, well formulated advice can help them achieve desired levels of heating at reasonable cost. While the terms 'adequate' and 'efficient' are definable against physical standards, the terms describing individual households' desires, needs and means are not, as households place different values on these factors.

Two slightly different approaches have been examined. In the Willows project in Bolton, individual advice based on each household's needs was given to various groups of tenants by locally recruited energy advisers. For the project with MIH, similar advice was given to sample groups of tenants together with regular information on fuel consumptions.

#### The education campaign

Modernisation of **the Willows estate** in Bolton, undertaken in 1981/82, included basic repairs and loft insulation, a new kitchen and bathroom and installation of a gas fire in the living room and a full central heating system in the other parts of each house. Follow-up observation showed that the rehabilitation package had not significantly reduced heat loss, draughts and dampness. Moreover, many tenants were afraid of, or simply did not know how to use the new space and hot water heating systems. Daytime occupancy levels tended to be high. This resulted in the gas fires in the living rooms being used for an average 12-16 hours per day, while the rest of the house remained cold.



Bolton MBC decided to test the viability of providing tenants with low cost energy advice, tailored to client needs, which enable them to get the maximum benefit from the improvements to their homes, especially the new heating system.

It was recognised that physical improvements alone could not ensure tenants would achieve higher comfort levels economically. In coordination with further refurbishment works which improved levels of insulation and ventilation in the properties, a group of households received information and personal advice from a trained adviser on the best means of achieving the comfort conditions they desired.

To test the efficacy of the advice scheme 72 households were asked to cooperate with the project. The first group of 24 households received both advice and the insulation package; a further group received the insulation package alone; and the final group neither insulation package nor advice.

A survey at the start of the project assessed tenants' attitudes to the renovation, and receptiveness to advice. Many tenants regarded the central heating system as inherently expensive to run and a luxury item. No tenants used the central heating system without the gas fire. This view of the heating system as an optional extra was backed by the fact that there were no radiators in the living rooms, so the gas fire had to be used to heat the main living area. Some tenants were afraid of fuel debt, most operated the system manually if at all, because they believed that using the timer encouraged over-use and extra expense.

The need to coordinate effective advice with refurbishment measures was demonstrated by the measurement of deteriorating conditions in some properties where insulation had been carried out without advice. In these homes tenants had lost the use of their windows in the bathroom and kitchen as the result of the installation of ventilation fans. They resented this and chose not to use the fans, with the result that increasing damp problems occurred.

A keynote to the development of the advice package was to ensure that its message was clear and understandable even to those unresponsive to formal means of communication. The project, therefore, placed a priority on the training of part-time energy advisers to deliver advice informally and verbally in tenants' own homes.

Advisers for the project were recruited locally and trained to advise on:

- ★ the control and use of the space and hot water heating system
- ★ the value of the installation of physical energy measures
- ★ running costs of appliances
- ★ causes and cures of condensation and damp
- ★ energy and money saving tips on things to do in the house
- ★ methods of paying for fuel

The advisers visited households once a month during the heating season. The main aim of their advice was to demonstrate to tenants that they could use the central heating system for space heating and hot water, without accruing large energy bills.

Advice sessions were not structured and depended on the tenants' interests and needs. The most popular subjects for advice were how to control the heating system, the running costs of appliances, how to work out bills, benefits, and methods of payment.

To support the verbal advice, a brochure was compiled, giving instructions on the use of the heating system, meter reading and advice on various energy related subjects, including costs. It also had a pocket on the back designed to hold bills and meter reading records.

Weekly internal maximum and minimum temperature readings were recorded for each of the houses in the sample groups, and external temperatures recorded on site. Further surveys were completed during the heating season to monitor changes in attitudes and to obtain feedback on the energy advice programme and the insulation package.

In a later project **Merseyside Improved Houses** undertook the refurbishment of a number of pre-1919 terraced houses. Thermal upgrading, with insulated dry lining, partial double glazing and automatic ventilation, produced a reduction in space heating consumption and condensation problems. However, a social survey carried out to examine attitudes to the refurbishment indicated that many people did not understand how to control the heating system, especially the time clock, and some tenants did not seem to realise the cost implications of inefficient energy use.

Four groups of tenants were asked to take part in an education campaign and survey, designed to help them make the most economical use of the resources available to them. The advisory scheme was built on the findings of the Willows project.

The first sample group had higher than standard levels of insulation in their homes; the second group had the standard

refurbishment package. Both were given energy efficiency advice. A further two groups were recruited, and their houses fitted with draughtstripping as an incentive to participate in the scheme. Half these tenants were given advice, the others not. As in Bolton, occupancy levels among the sample group were high, many of the tenants heating living rooms for more than 12 hours per day.

In addition to personal advice from a trained fieldworker, the tenants were given illustrated energy advice sheets and a folder to put them in. Each sheet covered a different subject, including use of heating controls, condensation control, hypothermia and energy saving tips. Tenants also received an energy calendar, with energy efficiency advice for each month, space to fill in meter readings at the end of each week, and a cost conversion table. Some of the cartoons used in the energy calendar are illustrated here. Each fortnight tenants received feedback on the number of units of gas and electricity they had consumed, and they were encouraged to fill in the intervening weeks themselves.

The tenants taking part in the programme completed two social surveys, designed to gauge attitudes to fuel use and receptiveness to advice. The second survey also assessed people's retention of facts from the information sheets.

## Energy savings and benefits

Monitoring of both projects was largely qualitative, since much of the work was concerned with tenants' attitudes.

### The Willows Project

★Although one tenant halved her fuel bills, in general, expenditure on energy was low to start with and benefits were most often perceived in terms of improved comfort.

★Internal temperatures and average fuel use were more evenly regulated throughout the heating season in the insulation and advice group than in the other groups.

★The insulation and advice group were the only households whose houses did not suffer from black mould during the winter. The insulation only group suffered most, confirming the need to coordinate advice and physical measures. Monitoring showed that tenants in the advice group were using the extractor fans more efficiently than the others, and that damp problems increased in proportion to the use of the gas fires as the major source of heating.

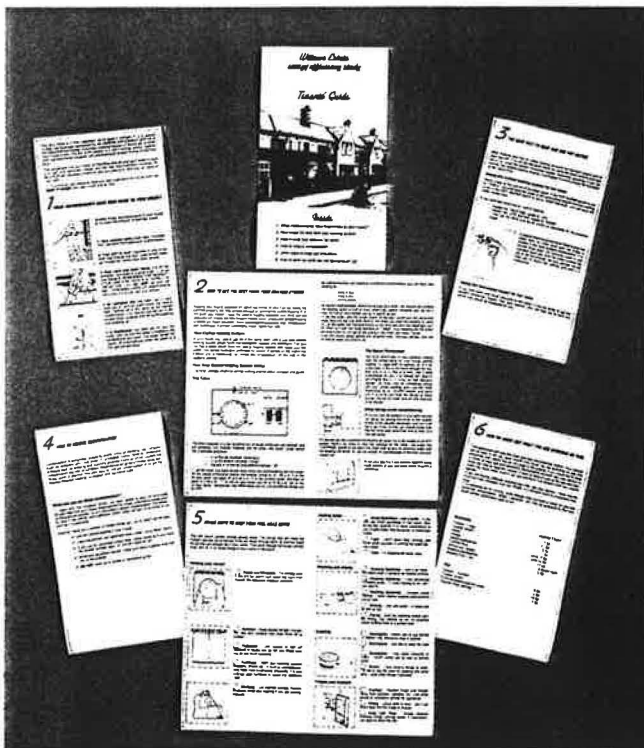
★Tenants requested advice on many energy related topics; 15 were taught how to use their thermostat properly, 9 started using the timer control on the central heating instead of operating it manually using the on/off switch.

★4 out of 5 households who used the immersion heater for hot water switched to the central heating boiler.

★61% of tenants in the insulation and advice group felt their homes to be warmer than others, and they showed less inclination than the other two groups to spend extra available money on heating, implying greater satisfaction with their comfort conditions. (They were already the top fuel consumers).

★Costs of the energy advice programme constituted less than 5% of the total project costs. The extra average savings generated in one heating season in the households receiving advice (over those receiving insulation only) ran to more than the cost of the advice scheme.

★There was a considerable reduction in the fear of high fuel bills, and a growth in understanding of easy ways to budget for and meet energy bills. This is of great benefit to households on marginal incomes.



## The MIH Project

★Average daily energy consumption data for two heating seasons was available for 30 houses. In 24 houses consumption dropped. In 14 houses the drop was more than 10%.

★Among the second sample recruited for the project, although both groups had similar household compositions and occupancy habits, and were given the same physical energy efficiency improvement—draughtstripping—consumption for the group who received advice was 13% lower than for the group who did not.

★18 people out of 58 who received advice claimed to have changed their behaviour in some way as a result of the advice given. Most of the significant changes in usage were associated with learning to use thermostats and timing systems.

★Running costs of appliances was the most frequently remembered piece of information, again highlighting tenants' concern over the economic viability of heating systems, and willingness to change habits if they are proved to be uneconomical.

## Conclusions

Energy advice has reduced fuel bills and improved the comfort level of tenants of both projects. A short term energy advice programme can have a great impact when carried out in parallel with refurbishment programmes.

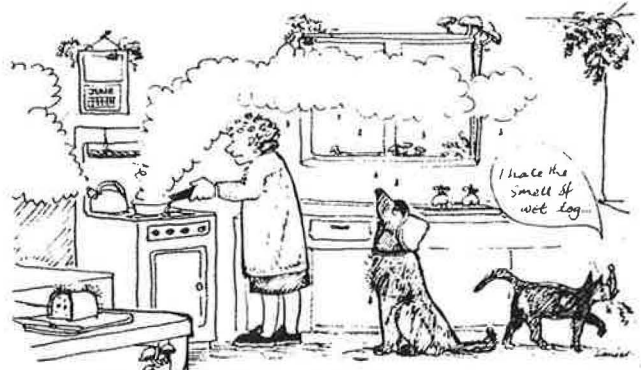
Generally, people with well insulated houses are more likely than those in poorly insulated houses to spend enough money on fuel to heat their homes to levels which maintain personal comfort and the condition of the building fabric, since they perceive such spending as effective.

The projects also showed that tenants are interested in the subject of energy efficiency if the benefits are explained in a way which seems relevant to them. This applies both to content and presentation. Tenants tended to be interested in the financial rather than the physical aspects of energy efficiency, and information should be tailored to their concerns. In terms of presentation, good illustration and verbal communication are necessary to overcome language and literacy barriers.

Local participation in energy efficiency schemes should be encouraged, and landlords should establish links with the local Neighbourhood Energy Action Groups who can provide effective advice for tenants.



ALWAYS CHECK YOUR TIME CLOCK AND TURN OFF RADIATORS NOT NEEDED.



CONDENSATION LEADS TO MOLD FORMING ON YOUR WALLS.  
— OPEN THE WINDOWS AND LET THE STEAM GO.



GETTING ON A BIT? IT'S IMPORTANT TO KEEP AT LEAST ONE ROOM WARM!

KEEP US WARMER HELP FROM THE SUN.

### **Bolton Metropolitan Borough's experience**

"The evidence from the Willows Project has been central to Bolton's radical new policy on energy efficiency in Council housing. Low consumption, ineffective use of central heating systems, uncertainty about the inter-relationships between heating, insulation and ventilation and the need for advice are the lessons from the Willows.

Our new policy responds to these key issues for our customers—make heating simple; limit the provision to 'need', and avoid control systems. Bolton is one of the first Councils to switch to a 'modular' approach for heating upgrade schemes in existing houses. This package comes with comprehensive insulation covering cavities, lofts and floors, and window draughtstripping comes first.

The 'modular' heating package aims to achieve comfort levels up to 21°C in the living room and 18°C in the bedroom. Individually controlled gas or electric appliances, subject to customer choice, are then available. Existing space and water heating arrangements are upgraded.

Finally and most importantly the whole package is 'sold' to our customers via a 'Heating Roadshow' with each Fuel Board together displaying their products, and Housing Department staff on hand to help customers choose.

Fuel poverty is so deep and widespread that the Willows Project identified customers who choose to be on the pre-payment meters paying high standing charges and unit costs. Advice and counselling in this type of situation is critical. Heating systems which rely on programmers, controllers, and the shrewd use of the system will be ignored by many of those whom the Housing Department has to serve.

The feedback from the customers of our latest 'modular' schemes is very positive. We will continue to be flexible in our response, and with the new modular approach we can target the 8,800 homes in greatest need, in half the time a full central heating programme would have taken.

Even with the modular heating package, energy advice as carried out on the Willows Project will help our customers get the most for the least cost.



*Hugh Swadlow*

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### **Energy Efficiency Demonstration Scheme**

The Government's Energy Efficiency Demonstration Scheme is aimed at stimulating investment in new ways of using energy more efficiently. By monitoring a full-scale trial of a piece of equipment or a process under normal working conditions, its technical and economic viability is demonstrated.

Organisations receive grants to mount demonstrations and the energy savings and other aspects of performance are monitored. The Scheme is sponsored by the Department of Energy's Energy Efficiency Office. Information from the demonstration is disseminated to interested parties to encourage replication of successful projects. Initially this takes the form of information sheets (Project Profiles) describing the

demonstration and detailing expected costs, energy savings and payback period. Once the demonstration is complete, a comprehensive monitoring report and an Expanded Project Profile are published. Seminars, open days and other events also serve to bring successful demonstration projects to the attention of possible replicators.

This demonstration is described in a final monitoring report to be published shortly. Copies of this report and further information on other projects in the Scheme are available from the Enquiries Bureau, Building Research Energy Conservation Support Unit, Building Research Establishment, Garston, Watford WD2 7JR. Tel No: 0923 894040.